

- 25 -

Claims

1. An antibody or fragment thereof which is reactive with HIV-1 neutralizing antibody 2F5 (ECACC Accession No. 90091704) and which
5 inhibits or prevents the HIV-1 neutralization activity of antibody 2F5 and/or the binding of antibody 2F5 to gp41 of HIV-1.
2. The antibody or fragment thereof according to claim 1, which inhibits or prevents binding of antibody 2F5 to proteins or peptides that comprise the
10 amino acid sequence SEQ ID NO.1 (ELDKWA) or an equivalent variant or homologue thereof, preferably selected from the group consisting of SEQ ID NO 2 to SEQ ID NO 12.
3. The antibody or fragment thereof according to claim 1 or 2, which upon
15 administration to a mammal elicits Ab3-type antibodies that have HIV-1 neutralizing activity, and/or that competes with antibody 2F5 for binding to proteins or peptides that comprise the amino acid sequence SEQ ID NO.1 (ELDKWA) or an equivalent variant or homologue thereof, preferably selected from the group consisting of SEQ ID NO 2 to SEQ ID NO 12.
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4. The antibody or fragment thereof according to any one of claims 1 to 3, wherein the antibody is an Ab2-type antibody which is anti-idiotypic to antibody 2F5.
- 25 5. The antibody or fragment thereof according to any one of claims 1 to 4, wherein the antibody is monoclonal and is produced by hybridoma cell line 3H6 (ECACC Acc. No. 01100279).
6. The antibody or fragment thereof according to any one of claims 1 to 5,
30 wherein the antibody has a heavy chain variable region according to SEQ ID NO 13 and/or a light chain variable region according to SEQ ID NO 14

- 26 -

7. The antibody or fragment thereof according to any one of claims 1 to 4, in the form of either a chimeric mouse/human antibody or fragment thereof, or a humanized version of a mouse antibody.

5 8. The antibody or fragment thereof according to any one of claims 1 to 7, which is associated, preferably coupled, linked, or fused, with an immunoactive molecule, more preferably with a molecule that increases or intensifies a B cell response, and most preferably with a cytokine such as interleukin-4 (IL-4) or interleukin-15 (IL-15).

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9. The antibody or fragment thereof according to any one of claims 1 to 8, for use as a screening tool or a diagnostic or therapeutic agent.

10. A hybridoma cell line producing an antibody according to any one of
15 claims 1 to 7.

11. The hybridoma cell line according to claim 10, which is cell line 3H6 (deposited at PHLS, Porton Down, Salisbury, UK, under ECACC Acc. No. 01100279).

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12. Use of an antibody or fragment thereof defined in any one of claims 1 to 9, for the manufacture of a pharmaceutical composition, particularly a vaccine, for prophylactic or therapeutic application against HIV-1 infection.

25 13. A pharmaceutical composition, particularly a vaccine, comprising an antibody or antibody fragment defined in any one of claims 1 to 9, and a pharmaceutically acceptable carrier.

14. A mixture, particularly a pharmaceutical composition or a vaccine,
30 comprising at least one Ab2 anti-idiotypic antibody or fragment thereof as defined in any one of claims 1 to 7, in combination with at least one fusion protein as defined in claim 8.

15. An Ab3-type antibody or fragment thereof which is reactive with an antibody or antibody fragment according to any one of claims 1 to 7 and which competes with antibody 2F5 for binding to gp41 of HIV1 or to proteins
5 or peptides that comprise the amino acid sequence SEQ ID NO.1 (ELDKWA) or an equivalent variant or homologue thereof, preferably selected from the group consisting of SEQ ID NO 2 to SEQ ID NO 12.
16. The Ab3-type antibody or antibody fragment according to claim 15
10 which neutralizes HIV-1.
17. The Ab3-type antibody or fragment thereof according to claim 15 or 16 for use as a screening tool or a diagnostic or therapeutic agent.
- 15 18. A pharmaceutical composition comprising an Ab3-type antibody or antibody fragment according to any one of claims 15 to 17, and a pharmaceutically acceptable carrier.